

DISCUSSION OF THE AMENDMENT

Claim 1 has been amended by incorporating the subject matter of Claim 2 therein, and by inserting that the combination is present in amounts that produce antifoam and/or deaerator effects greater than, in effect, the use of component (i) alone or component (ii) alone. Support for the latter amendment is found in the examples, beginning at page 14, line 1 of the specification, and particularly the disclosure at page 20, lines 17-19.

Claim 2 has been canceled. Claim 8 has been amended by inserting the word --said--. Claim 10 has been amended, analogously to the above-discussed amendment of Claim 1 with regard to the amounts of components (i) and (ii). Claim 11 has been canceled.

New Claims 16-19 have been added. Claims 16 and 17 are supported in the specification at page 5, lines 34-40 and the Examples. Claims 18 and 19 are supported in the specification at page 8, lines 5-7.

No new matter is believed to have been added by the above amendment. Claims 1, 3-10 and 12-19 are now pending in the application. Of these claims, Claims 12-15 stand withdrawn from consideration.

REMARKS

The rejections of Claims 1-4 and 7-10 under 35 U.S.C. § 102(b) as anticipated by, and of Claim 5 under 35 U.S.C. § 103(a) as unpatentable over, DE 19857204, as evidenced by US 6,340,662 (Millhoff et al), are respectfully traversed.

Millhoff et al discloses an aqueous foam regulator emulsion containing 16-70% by weight of an active foam regulator based on paraffin wax and/or silicone oil, 2-15% by weight of a nonionic and/or anionic emulsifier and no more than 80% by weight of water, wherein the paraffin wax component is a combination of paraffin wax and a bis-fatty acid amide (column 2, line 65 through column 3, line 5). The bis-fatty acid amide *per se* is disclosed as being present in an amount of 1-10% by weight, more particularly 3-8% by weight (column 3, lines 9-12). Among the many applicable nonionic emulsifiers listed by Millhoff et al (column 5, line 21 ff), are “[e]sters or partial esters of carboxylic acids with a corresponding carbon chain length with polyols, such as glycerol or oligoglycerol” (column 5, lines 46-48). The Examiner relies on Table 1 therein. Presumably, the Examiner is relying on aqueous emulsion E2, which contains bis-stearic acid ethylene diamide and Emulsifier II, which contains triglycerol diisostearate (column 8, lines 1-19).

Millhoff et al neither anticipates nor otherwise renders the presently-claimed invention unpatentable. Millhoff et al neither discloses nor suggests the presently-recited hydrophobic compound. Nor, when esters of carboxylic acids with oligoglycerols are used as nonionic emulsifiers, does Millhoff et al disclose or suggest that they be present in combination with the bis-fatty acid amide in amounts now required by the present claims.

For all the above reasons, it is respectfully requested that these rejections be withdrawn.

The rejection of Claim 10 under 35 U.S.C. § 102(b) as anticipated by JP 2000-230084A (Nakahara et al), is respectfully traversed. Nakahara et al discloses a resin

composition having a high antistatic effect, which is obtained by adding a fatty acid ester of a polyglycerin having an average degree of polymerization of two or larger as a component (A), and a fatty acid amide or fatty acid bisamide as a component (B), to a polyolefin resin base material which is polymerized using a metallocene catalyst. However, Nakahara et al neither discloses nor suggests that their components (A) and (B) be present in amounts as required by the present claims. Accordingly, it is respectfully requested that this rejection be withdrawn.

The rejection of Claims 1-10 under 35 U.S.C. § 103(a) as unpatentable over US 4,626,377 (Kavchok et al) taken with US 5,700,351 (Schuhmacher et al) or US 5,236,499 (Wegner et al), is respectfully traversed.

Kavchok et al discloses a defoaming composition comprising as the primary component an aqueous hydrophobic dispersion of an alcohol of 14-28 carbon atoms, a fatty acid of 14-18 carbon atoms, a soap of a fatty acid of 14-28 carbon atoms, and a nonionic or anionic surfactant, and as a secondary component a dispersion of a hydrophobic solid in a water insoluble liquid (Abstract). Among the hydrophobic solids listed as applicable in the secondary component are various bisamides obtained by the reaction of a polyamide with a solid fatty acid or mixture thereof (column 4, line 50ff). As indicated by the Examiner, Example 4 contains such a secondary component.

Acknowledging that Kavchok et al does not disclose the incorporation of a polyglyceryl ester into their composition, the Examiner relies on Schuhmacher et al or Wegner et al. Both Schuhmacher et al and Wegner et al disclose antifoam compositions for the paper industry as oil-in-water emulsions containing, *inter alia*, polyglyceryl esters of carboxylic acids having 12 to 36 carbon atoms.

The Examiner holds, in effect, that it would have been obvious to combine the compositions of Kavchok et al with that of Schuhmacher et al or Wegner et al.

In reply, Applicants do not question that presently-recited components (i) and (ii) have been used alone or with other components in antifoam compositions. But it was Applicants' discovery that when these components are used together, defoaming is obtained that is better than the use of either component (i) or (ii) alone, based on the same total amount of antifoam. This discovery is supported by the comparative data in the specification herein, described in the specification beginning at page 14. Examples 1-3 are according to the presently-claimed invention. Comparative Examples 1-4 are for purposes of comparison, each of which contains only one of the two components (i) and (ii). As described in the specification at page 19, lines 36-40, the examples and comparative examples were tested for their antifoam or deaerating effect when used in amounts of 5 or 3 ppm, based on dry paper stock. The results are shown in the table at page 20 of the specification, reproduced below:

Example	Comparative example	Air content in % by volume with use of			
		5 ppm, based on dry matter, of deaerator		3 ppm, based on dry matter, of deaerator	
		lowest value	average over 5 min	lowest value	average over 5 min
1	-	0.40	0.68	0.83	1.02
-	1	0.85	1.1	1.01	1.22
2	-	0.38	0.75	0.98	1.20
-	2	0.82	1.03	1.03	1.18
3	-	0.42	0.72	0.80	1.05
-	3	0.88	1.12	0.98	1.21
-	4	1.01	1.23	1.10	1.22

As Applicants describe in the specification at page 20, lines 17-19, "the combination of polyglyceryl esters with ethylenebisstearamide has an improved effect compared with the use of the individual components."

Even if the prior art were combined as suggested by the Examiner, the above-discussed results could not have been predicted by this prior art.

For all the above reasons, it is respectfully requested that this rejection be withdrawn.

The provisional rejection of Claims 1-5 and 7-10 on the ground of nonstatutory obviousness-type double patenting over at least Claims 1, 5 and 8 of copending Application No. 10/570,154 (copending application), is respectfully traversed.

There is nothing in the claims of the copending application directed specifically to a bisamide of ethylene diamine and carboxylic acids, let alone in combination with at least one polyglyceryl ester of the type recited in the present claims, and in the amounts recited in the present claims. Accordingly, it is respectfully requested that the provisional rejection be withdrawn.

The objection to the specification as not containing an Abstract of the Disclosure is respectfully traversed. **Submitted herewith** is page 23 of the application as filed, which contains the Abstract. Note that the first two lines of said page refer to the title of the invention.

All of the presently-pending claims in this application are now believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

Respectfully submitted,

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Antifoams and/or deaerators for aqueous media which tend to form foam

## 5 Abstract

Antifoams and/or deaerators based on oil-in-water dispersions, whose oil phase contains at least one compound from the group consisting of the alcohols of at least 12 carbon atoms,

- 10 alkoxyated fatty alcohols, mono-, di- and triglycerides of fatty acids, fatty acid esters of carboxylic acids of at least 12 carbon atoms and monohydric to tetrahydric alcohols of 1 to 24 carbon atoms, hydrocarbons having a boiling point above 200°C, fatty acids of 12 to 26 carbon atoms, 3-thiaalkan-1-ols,
- 15 3-thiaoxoalkan-1-ols, 3-thiadioxoalkanols and esters of thiaalkane compounds in combination with

- (i) at least one polyglyceryl ester which is obtainable by at least 20% esterification of polyglycerol with a carboxylic
- 20 acid of 12 to 36 carbon atoms and
- (ii) at least one bisamide of ethylenediamine and carboxylic acids of 10 to 36 carbon atoms

- 25 and whose aqueous phase contains at least one stabilizer, water and, if required, a thickener, for aqueous media which tend to form foam, are used for foam control of aqueous media which tend to form foam, in particular for foam control in pulp cooking, pulp washing, the beating of paper stock, papermaking and the
- 30 dispersing of pigments for papermaking.

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